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B6A ADE A301 A316

(56) Documents cited

GB 2244454 A EP 0394573 A

(58) Field of search

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Online databases: WPI

(54) **Greeting card with integral voice message module**

(57) A greeting card has integrally mounted thereto a voice message module including an Electrically Erasable Programmable Read Only Memory (ideally an OTPROM) 14 and a connector 12 for the purpose of connecting the greeting card to a recording unit 1. The recording unit 1 comprises a microphone 10 connected to a voice record chip 4, a DRAM 5 and a connector 3 for enabling the unit to be connected to the greeting card so that a message or greeting passing by the microphone to the voice record chip can be stored on the recording unit memory prior to transfer, via the connector, to the OTPROM of the greeting card. In use the greeting card 2 is inserted into a socket (23, Fig. 2) of the recording unit, connection of the voice message module to the unit being made via apertures in the card.

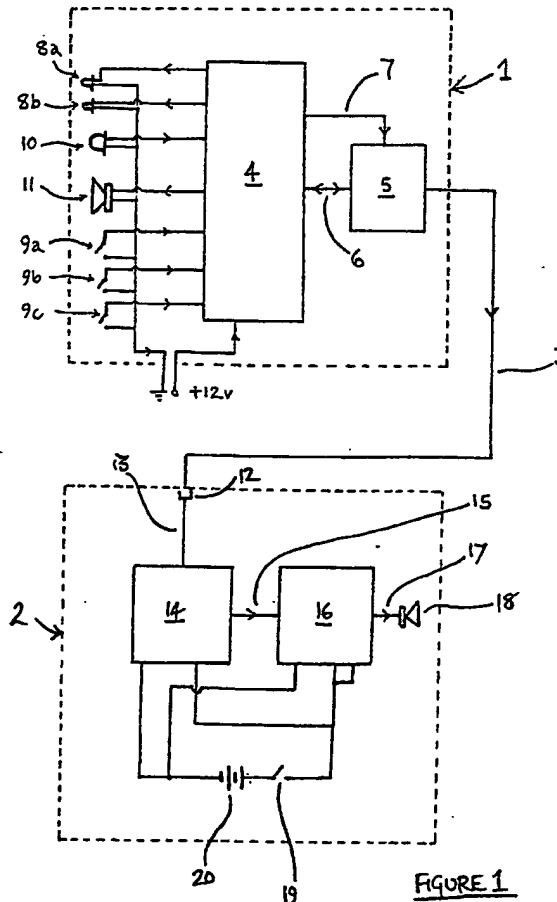
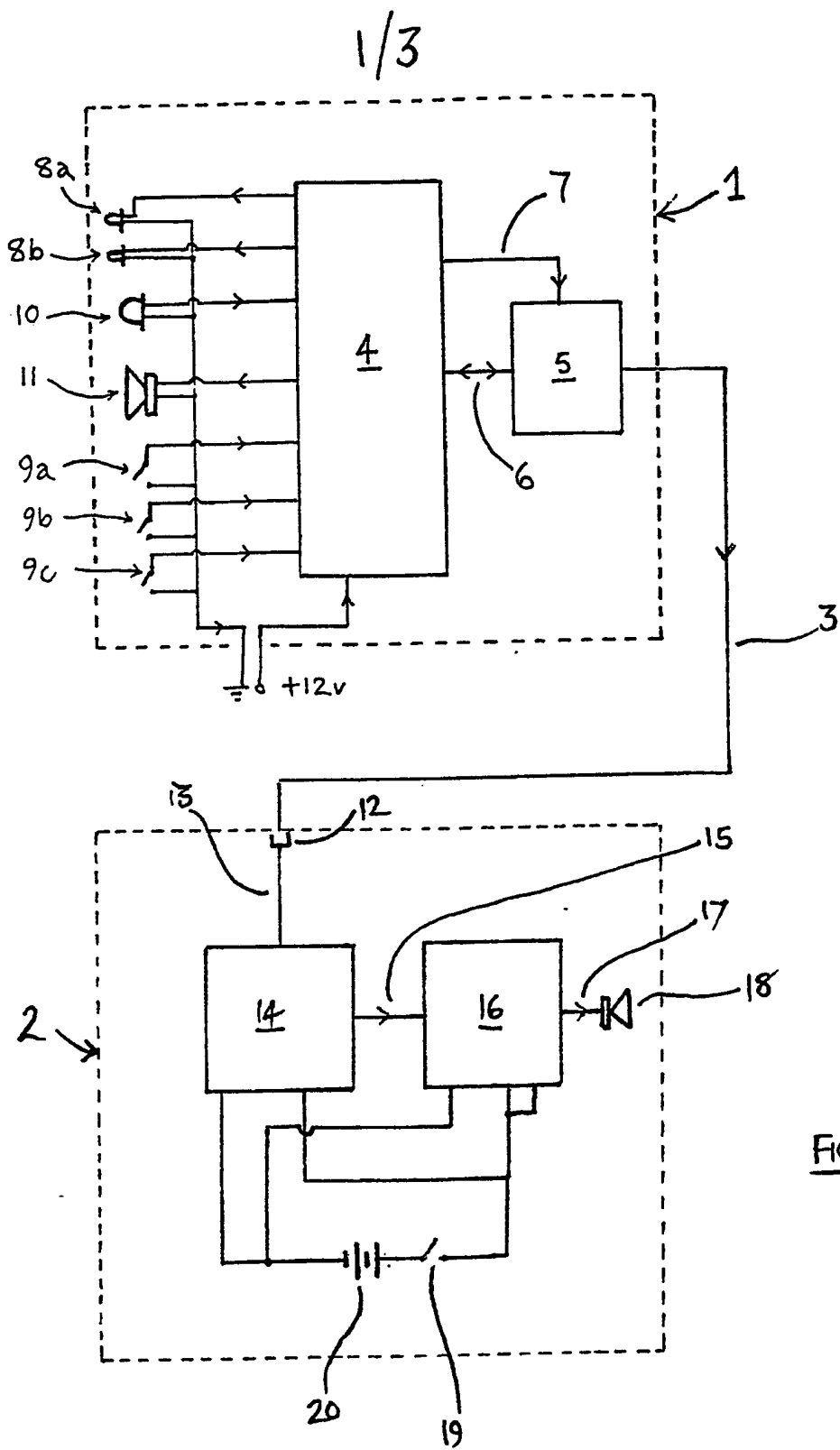


FIGURE 1

GB 2 264 898 A



2/3

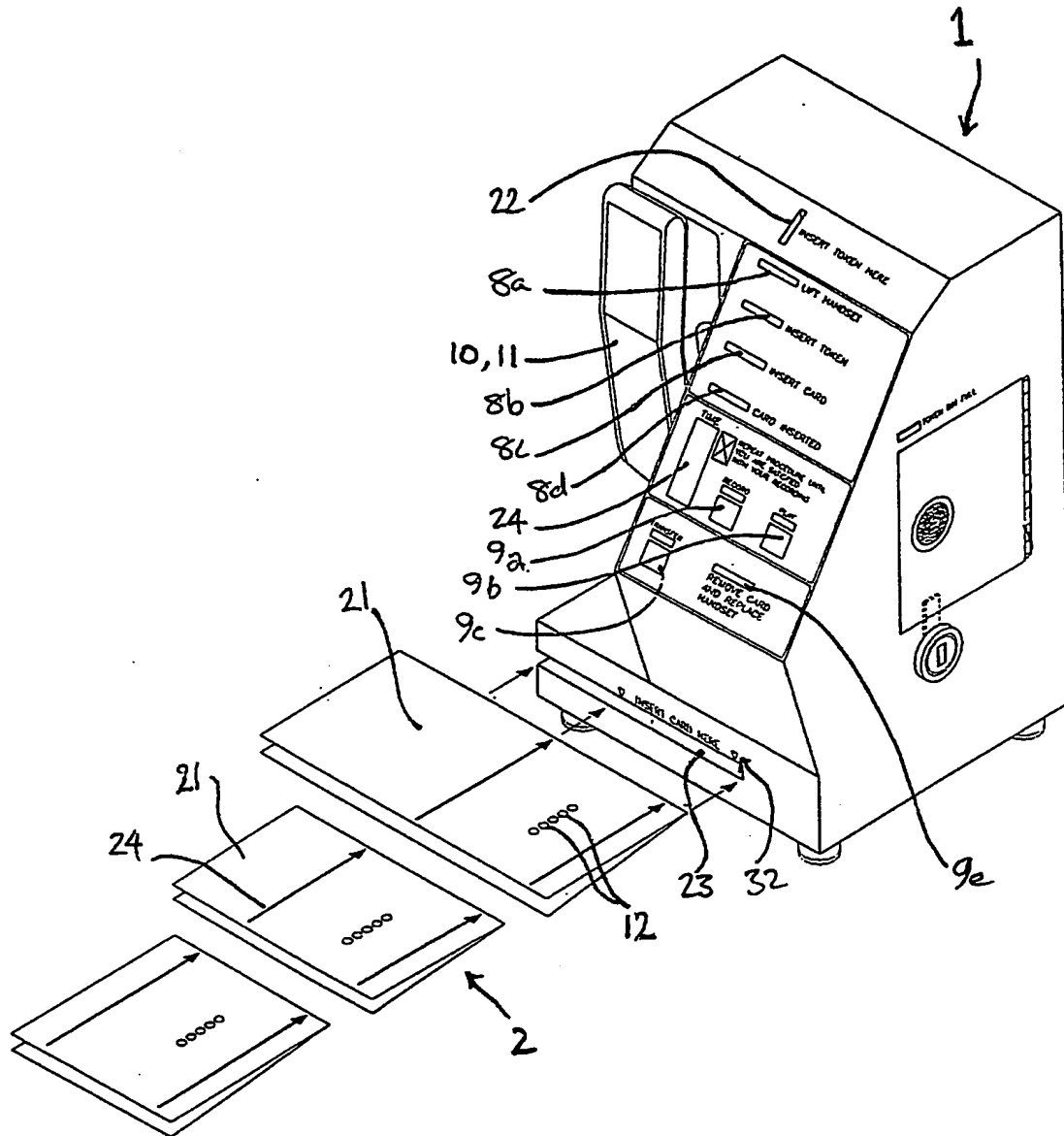


FIGURE 2

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FIGURE 3

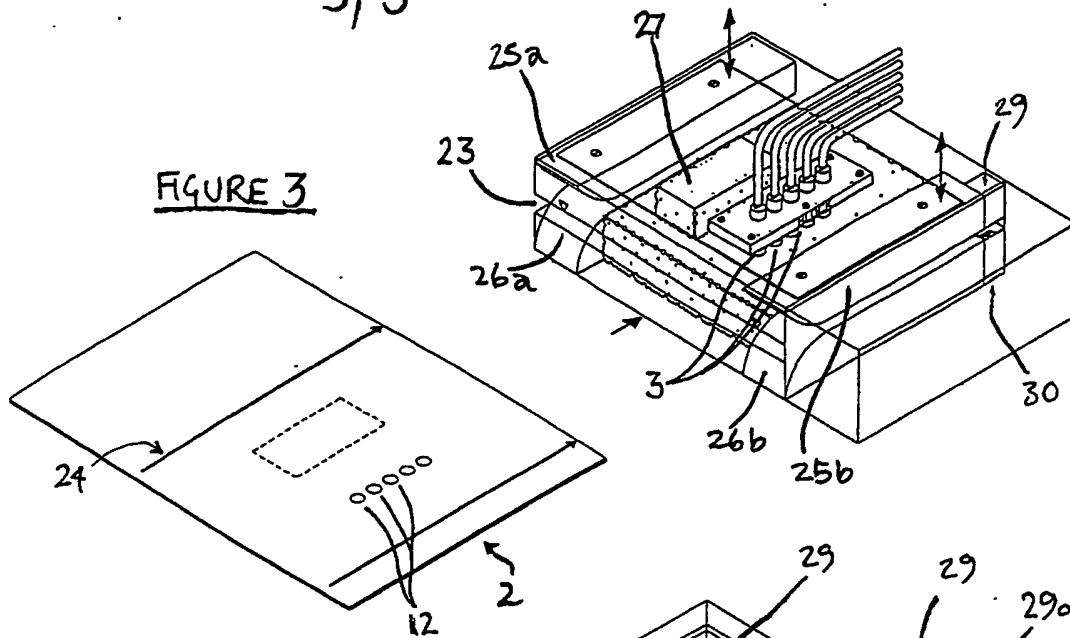
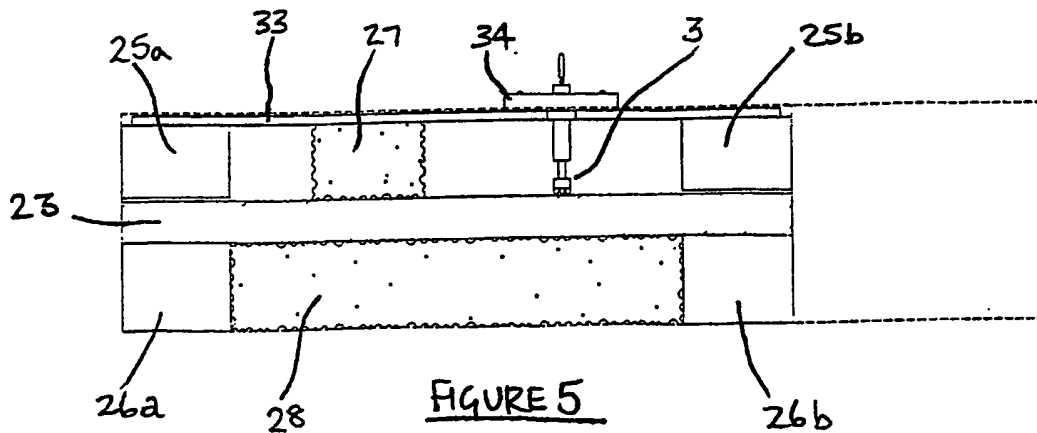
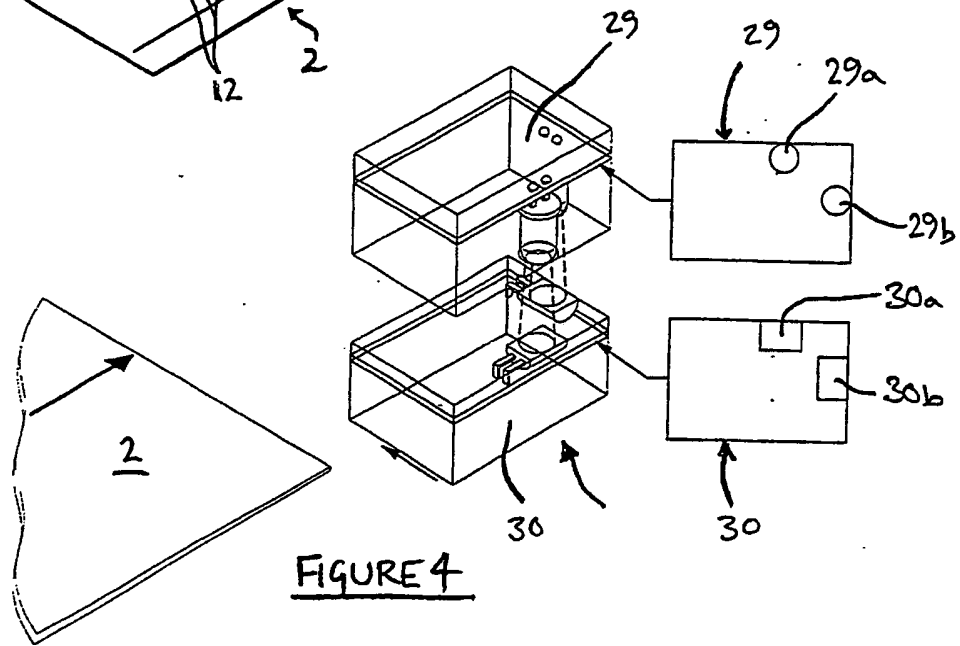


FIGURE 4



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IMPROVEMENTS RELATING TO MESSAGE OR GREETING
SYSTEMS

Field of the Invention

5 The present invention relates to a message or greeting system which has particular application in the production of greeting cards.

Background to the Invention

10 It is known to provide greeting cards with integrated circuitry including a read only memory (ROM) and switch means whereby upon opening the card the switch means is activated and a recording stored on the ROM is played so producing a pre-selected sound recording in the form of a tune or a vocal message when the card is opened. A card of this type is described in EP-A-0 034 024.

15 More advanced greeting cards which have a recording facility to enable the purchaser to record his or her voice speaking the message or greeting exist and are exemplified in EP-A-0 277 276. In such recordable cards, in order to effect recordal on the memory included in the card, the recording means on the card must include a microphone sensitive enough to record a voice sufficiently well to make it recognisable on play-back, yet which is thin and small enough to fit in the card. The recording means must also include control means in the form of a set of switches and/or a CPU or the like to enable the purchaser to operate firstly the record and then the play-back facility.
20 Desirable additional facilities include a test facility to enable a recording to

be made, played back and then allow re-recording if the original recording is not satisfactory. Safeguards to prevent accidental re-recording over the message and/or wiping out of the original message are also desirable.

5 The inclusion of the recording means in the greetings card as described in EP-A-0 277 276 does, however, not only render the card both very bulky and costly but also severely limits the level of sophistication of the recording process making re-record and safeguard facilities impractical.

10 One potential solution of the above problem is to provide an independent recording unit and a voice message module which may be fitted to the recording unit to store a message thereon before removing the module and subsequently fitting it to a greetings card which has been modified to accept the module. Such an approach does, however, increase the risk of damage to the voice message module and necessitates provision of a receptor on the card to fasten the module in place, adding to the cost, complexity and weight of the
15 card.

It is a general objective of the present invention to overcome these problems.

Summary of the Invention

20 According to a first aspect of the present invention there is provided a greeting or message system which comprises at least one voice message-carrying greeting card device and an independent recording unit, the greeting card device comprising a greeting card having integrally mounted thereto a voice message module comprising: an Erasable Programmable Read Only Memory (EPROM) for storing a voice message; a speaker operatively linked to the EPROM for play-back of the message; a source of power and a switch
25 for activating the play-back; and a connector mounted to a portion of the card for connecting the EPROM to the recording unit to enable transfer to the EPROM of a message recorded by the recording unit, the recording unit having a socket to receive at least said portion of the greeting card to enable the connector to connect with the recording unit, the recording unit also

having a controller for controlling the recording and transfer of the message to the EPROM.

5 Preferably the connector comprises at least one connector member which is accommodated within an envelope formed by the card and is exposed by a corresponding at least one aperture in the card.

The recording unit advantageously has a clamp to clamp at least said portion of the card in the socket.

10 Suitably the recording unit has one or more sensors to detect the position of a card inserted into the socket and a controller to activate operation of the clamp when the sensors detect the card to be correctly positioned for connection between the connector and the recording unit.

15 The recording unit suitably further comprises means to register actual successful connection of the connector with the recording unit, and preferably said connection register is linked to the clamp to prevent or release the clamp from operation.

20 Preferably the system further comprises at least one authorisation token to be applied to or associated with a greetings card device, the recording unit having authorisation token registration means to register the presence of a said token when a said greetings card device is presented to the recording unit to enable the recording of a message and transfer of the message onto the greeting card device.

The or each authorisation token suitably comprises a tab which is fastened to a greetings card device such as to be non-transferrable to another greetings card device.

25 The preferred speaker is a piezo speaker.

The preferred EPROM is a One Time Programmable Read Only Memory.

According to a second aspect of the present invention there is provided a greeting card device, the greeting card device comprising a greeting card having integrally mounted thereto a module comprising: an Erasable Programmable Read Only Memory (EPROM) for storing a voice message; a
5 speaker operatively linked to the EPROM for play-back of the message; a source of power and a switch for activating the play-back; and a connector mounted to a portion of the card for connecting the EPROM to the recording unit to enable transfer to the EPROM of a message recorded by the recording unit.

10 The connector suitably comprises at least one or more connector members accommodated within an envelope formed by the card and which is exposed by a corresponding at least one aperture in the card.

Brief Description of the Drawings

15 Preferred embodiments of the present invention will now be more particularly described, by way of example, with reference to the accompanying drawings, wherein:

Figure 1 is a schematic representation of a recording unit and greetings card device of the first aspect of the present invention;

Figure 2 is a perspective view of the system;

20 Figure 3 is a detailed schematic view of the internal construction of the card-receiving socket of the recording unit;

Figure 4 is an exploded view of the card alignment sensor of the card-receiving socket; and

Figure 5 is a front elevation view of the card-receiving socket of Figure 3.

25 Description of the Preferred Embodiments

Referring to Figure 1, the schematic diagram illustrates a recording unit 1 operatively linked to a voice message greetings card device 2.

The recording unit 1 may physically resemble a desk-top public telephone as illustrated in Figure 2 and will be described in further detail later.

5 The voice message greetings card device 2 comprises a generally conventional greetings card 21 to which a voice message module, comprising a voice message storage and play-back means, is integrally mounted by enfolding the module within the material of the card, by securing a special retaining layer or pouch to the card or by any other suitable means whereby the module is
10 securely and generally inaccessibly attached to the card 21.

 The recording unit 1 comprises a central processing unit (CPU) 4 which governs the record, play-back and transfer of voice messages onto the module of a card 21 when the card 21 is fitted to the recording unit 1 by a card purchaser. The CPU 4 is functionally coupled to a Dynamic Random Access
15 Memory 5 via a data communication line 6 and a power control line 7. Thus, the CPU 4 is able to control the operation of DRAM 5 and also transfer data thereto. The CPU 4 receives power via a mains adaptor from a mains power supply.

 As illustrated in Figure 2, a microphone 10 and test play-back speaker 11 are
20 provided in a hand set and a series of switches 9 and action or status indicators 8 are provided on the front facia of the recording unit 1. Sequentially lit indicators 8a-d respectively instruct the user to firstly lift the handset and to then insert an authorisation token into a slot 22 in the unit 1 before inserting the greeting card 21 into a socket 23 in the base of the unit 1,
25 and finally indicating to the user that the card has been correctly inserted.

 A further indicator 24 displays to the user the amount of remaining recording time available following activation of the recording operation by pressing record button 9a.

Each of the record button 9a, test replay button 9b and voice message transfer initiation button 9c has an associated indicator which is illuminated when the respective process is initiated.

5 A further button 9e instructs the user to remove the card and replace the handset once the transfer of the voice message is completed.

Practical limitations dictate that the standard recording time is of the order of eight seconds with a recording frequency of approximately eight KHz.

10 The provision of an independent transfer initiation button 9c enables the user to make several attempts at recording the message, with test replays after each attempt, before actually committing the recorded voice message to storage on the voice message module of the voice message-carrying greetings card device 2.

The construction of the voice message module and the system for functional connection between the module and the recording unit 1 will now be detailed.

15 The module comprises an Electrically Programmable Read Only Memory 14 for storage of the voice memory, and a voice play-back chip 16 for control of the play-back and digital to analogue conversion of the stored voice message. The EPROM 14 is connected to the voice play-back chip 16 via line 15 and the voice play-back chip 16 is connected, in turn via line 17 to a piezo speaker
20 18. The circuitry connecting the EPROM to the chip 16 further includes a switch 19 and a battery 20, the switch being arranged so as to effect the supply of power to the EPROM 14 and chip 16 when the card is opened and so bring about playing of the recorded message. The circuitry is further arranged so that when the card is opened the voice play-back chip 16 sends the recorded
25 message to the loudspeaker 18 only once and following playing of the message the circuitry switches to standby mode so drawing only a minute leakage current from the battery 20 until the card is closed. By this means the life of the battery may be extended considerably.

By using a One Time Programmable EPROM 16 the message cannot be erased and via the provision of a suitable battery means 20 the message can be replayed a minimum of 100 times before the batteries on the card 2 run out. If required, the battery 20 can be replaced and the message can be replayed indefinitely.

Functional connection of the voice message module to the recording unit 1 is achieved by means of a series of specialised connector terminals 12 exposed through apertures in the fabric of the greeting card 21. These terminals 12 are linked to the EPROM by a line 13 and connect with the recording unit 1 by contact with corresponding contact probes 3 within the card receptor socket 23 of the recording unit 1.

Referring to Figures 3 to 5, effective coupling of the connector terminals 12 of the card 2 with the contact probes 3 of the recording unit 1 is ensured both by fixed and resilient support elements, clamps and electronic position registering means.

The rear of the greetings card 2 is illustrated in Figure 3 as being marked with directional arrows 24 showing the user how to guide the card into the card receptor socket 23.

The receptor socket 23 is defined between upper 25a, 25b and lower 26a, 26b clamping elements and between upper 27 and lower 28 foam blocks, the upper elements 25 and blocks 27 having a metal plate 33 thereabove to which the block of contact probes 3 are mounted via an insulating fixing plate 34. The foam blocks 27 and 28 provide resilient support to loosely hold the card in place and the clamps 25, 26 secure the card 21 in place once the termini 12 and probes 3 are satisfactorily aligned.

The correct positioning of the termini 12 relative to the probes 3 is ensured firstly by infra-red position sensors comprising corresponding edge transmitter 29 a, b and receiver 30 a, b pairs located in a corner toward the rear of the socket 23 to register when the corner of the card has been fully inserted into

the socket 23.

5 The microprocessor controlling operation of the recording unit 1 will register whether or not the card has been correctly inserted and provide a display indication via indicator 8d that this has been achieved as well as activating the
movable upper clamp elements 25a, b downwardly to clamp the card 21 in place.

10 As a further aid to ensure that full operational contact has been made between each contact probe 3 and corresponding connector terminal 12 of the card device 2 a register within the recording unit 1 registers the making of electrical contact between probes 3 and termini 12 and over-rides the signal from the infra-red position sensors 29, 30 to prevent activation of the clamp 25, 26 or to effect release thereof.

In use the system will operate as follows.

15 A purchaser will select a card and purchase it. The retailer will then remove part of the packaging from the card so as to reveal the termini of the connector 12. Additionally, the retailer will provide the purchaser with an authorisation token to enable use of the recording unit 1.

20 In the embodiment illustrated in Figure 2 the authorisation token will take the form of a specially moulded plastic coin-like token. However, to provide a further safeguard against use of the authorisation token in respect of a card which the user has not purchased, the token suitably comprises a self-adhesive tab to be applied to the exterior of the card 21 by the retailer and sensed by sensors on the recording unit 1. The authorisation tab is suitably of a distinctive nature, for example, having metalised strips to be sensed by the
25 sensor(s) and is not removable from a card once adhered thereto.

The card purchaser will then orientate the card 21 to align the arrows 24 on the card 21 with respective markings 32 at the mouth of the slot-shaped socket 23 of the recording unit 1.

The afore-mentioned instruction indicators 8a-d will sequentially become illuminated to instruct the user firstly to lift the handset, secondly to insert the token and then to insert the card 21, finally acknowledging that the card has been properly inserted or not, as the case may be. A notice will tell the user to
5 move the card 21 in the slot 23 until the card insertion acknowledgement indicator 8d lights up. Illumination of the indicator 8d will be dependent upon the sensing of the corner of the card 21 in the appropriate location by the infra-red sensor unit 29, 30 and the sensing of contact being made between the connector termini 12 of the card 21 and the contact probes 3 of the
10 recording unit 1.

Alternatively, the instructions for use of the recording unit 1 could be given by a speech synthesis unit giving different directions at different times according to what the purchaser of the card has done. This information could be controlled by the CPU 4 of the recording unit 1.

15 A user will then press the record switch 9a which allows recording to take place and simultaneously illuminate the associated recording acknowledgement indicator. The user can now speak for a period of approximately 8 seconds. The time remaining for the message will be indicated by the indicator 24 and once the message has been recorded it will
20 pass via the CPU to the DRAM 5 where it is stored. If play-back switch 9b is then pressed the recording will be played back through an amplifier and speaker built into the recording unit 1. If the user is not satisfied with the nature of the recording, record switch 9a can be pressed again and the process repeated.

25 Once the user is satisfied with the nature of the recording, transfer switch 9c can be pressed so as to effect transfer of the recorded message to the greeting card 21. In order to prevent accidental transfer of unsatisfactory messages, a removable cover is provided over transfer switch 9c. Thus, only when a user is satisfied with a message does the user remove the cover and so press switch
30 9c. Additionally, or alternatively, logic circuitry within the CPU 4 dictates that only one transfer can be effected.

Activation of transfer switch 9c sends a transfer signal to the CPU 4 which brings about transfer of a message stored on the DRAM 5 to the connector 12. Once the message is received at connector 12 it is transferred via line 13 to the OTP EPROM 14 where it is stored.

- 5 The card 21 is then ready to be sealed in an envelope and mailed to the recipient.

10 As will be appreciated from the above, the system of the present invention enables a high degree of sophistication in the recording process whilst the greeting card device 2 remains light, cheap to manufacture and relatively robust.

Although the present invention has been described above with respect to a limited number of preferred embodiments, numerous alternative embodiments are conceivable within the scope of the invention.

CLAIMS:

1. A greeting or message system which comprises at least one voice message-carrying greeting card device and an independent recording unit, the greeting card device comprising a greeting card having integrally mounted thereto a voice message module comprising: an Erasable Programmable Read Only Memory (EPROM) for storing a voice message; a speaker operatively linked to the EPROM for playback of the message; a source of power and a switch for activating the playback; and a connector mounted to a portion of the card for connecting the EPROM to the recording unit to enable transfer to the EPROM of a message recorded by the recording unit, the recording unit having a socket to receive at least said portion of the greeting card to enable the connector to connect with the recording unit, the recording unit also having a controller for controlling the recording and transfer of the message to the EPROM.
2. A greeting or message system as claimed in Claim 1, wherein the connector comprises at least one connector member which is accommodated within an envelope formed by the card and is exposed by a corresponding at least one aperture in the card.
3. A greeting or message system as claimed in Claim 1 or Claim 2, wherein the recording unit has a clamp to clamp at least said portion of the card in the socket.
4. A greeting or message system as claimed in Claim 3, wherein the recording unit has one or more sensors to detect the position of a card inserted into the socket and a controller to activate operation of the clamp when the sensors detect the card to be correctly positioned for connection between the connector and the recording unit.
5. A greeting or message system as claimed in any preceding Claim wherein the recording unit further comprises means to register actual

successful connection of the connector with the recording unit.

6. A greeting or message as claimed in Claim 3 or 4 and 5 wherein said connection register is linked to the clamp to prevent or release the clamp from operation.

5 7. A greeting or message system as claimed in any preceding Claim, wherein the system further comprises at least one authorisation token to be applied to or associated with a greetings card device, the recording unit having authorisation token registration means to register the presence of a
10 said token when a said greetings card device is presented to the recording unit to enable the recording of a message and transfer of the message onto the greeting card device.

8. A greeting or message system as claimed in Claim 7, wherein the or each authorisation token comprises a tab which is fastened to a greetings card device such as to be non-transferrable to another greetings card device.

15 9. A greeting or message system as claimed in any preceding Claim, wherein the speaker is a piezo speaker.

10. A greeting or message system as claimed in any preceding Claim, wherein the EPROM is a One Time Programmable Read Only Memory.

20 11. A component of the greetings or message system claimed in Claim 1, which component comprises a greeting card device, the greeting card device having integrally mounted thereto a module comprising: an Erasable Programmable Read Only Memory (EPROM) for storing a voice message; a speaker operatively linked to the EPROM for playback of the message; a source of power and a switch for activating the playback; and a connector
25 mounted to a portion of the card for connecting the EPROM to the recording unit to enable transfer to the EPROM of a message recorded by the recording unit.

12. A greeting card device as claimed in Claim 11, wherein the connector comprises at least one or more connector members accommodated within an envelope formed by the card and which is exposed by a corresponding at least one aperture in the card.

- 5 13. A greeting or message system substantially as described herein with reference to the accompanying drawings.

-14-

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

Application number

GB 9305266.0

Relevant Technical fields

(i) UK Cl (Edition L) B6A (ADE)

(ii) Int Cl (Edition 5) B42D

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASES: WPI

Search Examiner

G RUSSELL

Date of Search

24 MAY 1993

Documents considered relevant following a search in respect of claims 1-13

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
A	GB 2244454 A (OREX) see Figures 3 and 8	
A	EP 0394573 A (DAI NIPPON) see column 4 lines 45-58	

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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